

ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-158802-1
Client Project/Site: Gadsden PFC Sampling

For:
Gadsden Water Works
515 Albert Rains Blvd
Gadsden, Alabama 35901

Attn: Mike Lankford



Authorized for release by:
2/24/2022 1:32:28 PM

Betsy Sara, Project Manager II
(303)736-0189
Betsy.Sara@Eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: Gadsden Water Works
Project/Site: Gadsden PFC Sampling

Job ID: 280-158802-1

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Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: Gadsden Water Works

Project: Gadsden PFC Sampling

Report Number: 280-158802-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 02/16/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.1 C.

PERFLUORINATED HYDROCARBONS (PFAS) MOD

Samples Gadsden- RW (280-158802-1), Gadsden- FW (280-158802-2) and Gadsden- GAC (280-158802-3) were analyzed for Perfluorinated Hydrocarbons (PFAS) MOD in accordance with 537 MOD. The samples were prepared on 02/19/2022 and analyzed on 02/20/2022.

The method required MS/MSD could not be performed due to insufficient sample volume, however, a LCS/LCSD pair was analyzed to demonstrate method precision and accuracy.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Gadsden Water Works
 Project/Site: Gadsden PFC Sampling

Job ID: 280-158802-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Client Sample ID: Gadsden- RW
Date Collected: 02/14/22 20:25
Date Received: 02/16/22 09:35

Lab Sample ID: 280-158802-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.30	U	1.8	0.30	ng/L		02/19/22 08:53	02/20/22 20:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.37	U	1.8	0.37	ng/L		02/19/22 08:53	02/20/22 20:55	1
9CI-PF3ONS	0.22	U	1.8	0.22	ng/L		02/19/22 08:53	02/20/22 20:55	1
HFPO-DA	1.4	U	3.7	1.4	ng/L		02/19/22 08:53	02/20/22 20:55	1
NEtFOSAA	1.2	U	4.6	1.2	ng/L		02/19/22 08:53	02/20/22 20:55	1
NMeFOSAA	1.1	J	4.6	1.1	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorobutanesulfonic acid (PFBS)	100		1.8	0.18	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorodecanoic acid (PFDA)	3.4		1.8	0.29	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorododecanoic acid (PFDoA)	0.51	U	1.8	0.51	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluoroheptanoic acid (PFHpA)	10		1.8	0.23	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		1.8	0.53	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorohexanoic acid (PFHxA)	27		1.8	0.53	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorononanoic acid (PFNA)	2.8		1.8	0.25	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorooctanesulfonic acid (PFOS)	38		1.8	0.50	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorooctanoic acid (PFOA)	25		1.8	0.78	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorotetradecanoic acid (PFTA)	0.67	U	1.8	0.67	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluorotridecanoic acid (PFTrDA)	1.2	U	1.8	1.2	ng/L		02/19/22 08:53	02/20/22 20:55	1
Perfluoroundecanoic acid (PFUnA)	1.0	U	1.8	1.0	ng/L		02/19/22 08:53	02/20/22 20:55	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	100		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C2 PFDoA	86		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C2 PFHxA	91		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C2 PFTeDA	73		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C2 PFUnA	98		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C3 HFPO-DA	76		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C3 PFBS	85		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C4 PFHpA	85		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C4 PFOA	91		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C4 PFOS	80		25 - 150				02/19/22 08:53	02/20/22 20:55	1
13C5 PFNA	93		25 - 150				02/19/22 08:53	02/20/22 20:55	1
18O2 PFHxS	78		25 - 150				02/19/22 08:53	02/20/22 20:55	1
d3-NMeFOSAA	103		25 - 150				02/19/22 08:53	02/20/22 20:55	1
d5-NEtFOSAA	105		25 - 150				02/19/22 08:53	02/20/22 20:55	1

Client Sample ID: Gadsden- FW
Date Collected: 02/15/22 11:00
Date Received: 02/16/22 09:35

Lab Sample ID: 280-158802-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	0.30	U	1.8	0.30	ng/L		02/19/22 08:53	02/20/22 21:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.37	U	1.8	0.37	ng/L		02/19/22 08:53	02/20/22 21:05	1
9CI-PF3ONS	0.22	U	1.8	0.22	ng/L		02/19/22 08:53	02/20/22 21:05	1
HFPO-DA	1.4	U	3.7	1.4	ng/L		02/19/22 08:53	02/20/22 21:05	1
NEtFOSAA	1.2	U	4.6	1.2	ng/L		02/19/22 08:53	02/20/22 21:05	1
NMeFOSAA	1.1	U	4.6	1.1	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorobutanesulfonic acid (PFBS)	67		1.8	0.18	ng/L		02/19/22 08:53	02/20/22 21:05	1

Client Sample Results

Client: Gadsden Water Works
Project/Site: Gadsden PFC Sampling

Job ID: 280-158802-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Client Sample ID: Gadsden- FW
Date Collected: 02/15/22 11:00
Date Received: 02/16/22 09:35

Lab Sample ID: 280-158802-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	2.6		1.8	0.29	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorododecanoic acid (PFDoA)	0.51	U	1.8	0.51	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluoroheptanoic acid (PFHpA)	7.1		1.8	0.23	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.8	0.53	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorohexanoic acid (PFHxA)	22		1.8	0.54	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorononanoic acid (PFNA)	2.1		1.8	0.25	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorooctanesulfonic acid (PFOS)	24		1.8	0.50	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorooctanoic acid (PFOA)	19		1.8	0.79	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorotetradecanoic acid (PFTA)	0.67	U	1.8	0.67	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluorotridecanoic acid (PFTrDA)	1.2	U	1.8	1.2	ng/L		02/19/22 08:53	02/20/22 21:05	1
Perfluoroundecanoic acid (PFUnA)	1.0	U	1.8	1.0	ng/L		02/19/22 08:53	02/20/22 21:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	124		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C2 PFDoA	114		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C2 PFHxA	109		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C2 PFTeDA	125		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C2 PFUnA	127		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C3 HFPO-DA	102		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C3 PFBS	123		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C4 PFHpA	105		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C4 PFOA	109		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C4 PFOS	118		25 - 150				02/19/22 08:53	02/20/22 21:05	1
13C5 PFNA	115		25 - 150				02/19/22 08:53	02/20/22 21:05	1
18O2 PFHxS	108		25 - 150				02/19/22 08:53	02/20/22 21:05	1
d3-NMeFOSAA	123		25 - 150				02/19/22 08:53	02/20/22 21:05	1
d5-NEtFOSAA	131		25 - 150				02/19/22 08:53	02/20/22 21:05	1

Client Sample ID: Gadsden- GAC
Date Collected: 02/15/22 12:00
Date Received: 02/16/22 09:35

Lab Sample ID: 280-158802-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11Cl-PF3OUdS	0.31	U	1.9	0.31	ng/L		02/19/22 08:53	02/20/22 21:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.38	U	1.9	0.38	ng/L		02/19/22 08:53	02/20/22 21:15	1
9Cl-PF3ONS	0.23	U	1.9	0.23	ng/L		02/19/22 08:53	02/20/22 21:15	1
HFPO-DA	1.4	U	3.8	1.4	ng/L		02/19/22 08:53	02/20/22 21:15	1
NEtFOSAA	1.5	J	4.8	1.2	ng/L		02/19/22 08:53	02/20/22 21:15	1
NMeFOSAA	1.2	J	4.8	1.1	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorobutanesulfonic acid (PFBS)	67		1.9	0.19	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorodecanoic acid (PFDA)	11		1.9	0.30	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorododecanoic acid (PFDoA)	4.7		1.9	0.53	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluoroheptanoic acid (PFHpA)	10		1.9	0.24	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		1.9	0.54	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorohexanoic acid (PFHxA)	36		1.9	0.55	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorononanoic acid (PFNA)	4.4		1.9	0.26	ng/L		02/19/22 08:53	02/20/22 21:15	1

Client Sample Results

Client: Gadsden Water Works
 Project/Site: Gadsden PFC Sampling

Job ID: 280-158802-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Client Sample ID: Gadsden- GAC

Date Collected: 02/15/22 12:00

Date Received: 02/16/22 09:35

Lab Sample ID: 280-158802-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	48		1.9	0.52	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorooctanoic acid (PFOA)	30		1.9	0.81	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorotetradecanoic acid (PFTA)	0.70	U	1.9	0.70	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluorotridecanoic acid (PFTTrDA)	1.2	U	1.9	1.2	ng/L		02/19/22 08:53	02/20/22 21:15	1
Perfluoroundecanoic acid (PFUnA)	5.3		1.9	1.1	ng/L		02/19/22 08:53	02/20/22 21:15	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDA	61		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C2 PFDoA	48		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C2 PFHxA	57		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C2 PFTeDA	52		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C2 PFUnA	53		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C3 HFPO-DA	50		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C3 PFBS	63		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C4 PFHpA	54		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C4 PFOA	53		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C4 PFOS	56		25 - 150				02/19/22 08:53	02/20/22 21:15	1
13C5 PFNA	59		25 - 150				02/19/22 08:53	02/20/22 21:15	1
18O2 PFHxS	57		25 - 150				02/19/22 08:53	02/20/22 21:15	1
d3-NMeFOSAA	66		25 - 150				02/19/22 08:53	02/20/22 21:15	1
d5-NEtFOSAA	60		25 - 150				02/19/22 08:53	02/20/22 21:15	1

Chain of Custody Record

Eurofins TestAmerica, Denver
 4955 Yarrow Street
 Arvada, CO 80002
 Phone (303) 736-0100 Fax (303) 431-7171

Client Information		Sampler:	Lab PM:		Carrier Tracking No(s):		COC No:		
Client Contact: Mike Lankford		Phone:	Sara, Betsy A				280-98696-29755.1		
Company: Gadsden Water Works		Due Date Requested:		Page: Page 1 of 1					
Address: 515 Albert Rains Blvd		TAT Requested (days):		Job #:					
City: Gadsden		PO #:		Preservation Codes:					
State, Zip: AL, 35901		WO #:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)					
Email: mlankford@gadsdenwater.org		Project #: 28020645 "PFC Waters"		Other:					
Project Name: Gadsden PFC Sampling		SSOW#:		TUR. -19					
Site:		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=BIOSUB, A=AIR)	
		2/14/22		2025		G		W	
Gadsden- RW		2/15/22		1100		G		W	
Gadsden- FW		2/15/22		1200		G		W	
Gadsden- GAC									

<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)	Date: _____ Date/Time: 2/15/2022 Date/Time: _____ Date/Time: _____
Empty Kit Relinquished by: _____ Relinquished by: Michael Brookins to cooler Relinquished by: _____ Relinquished by: _____	Company: GWWSB Company: _____ Company: _____
Received by: _____ Date/Time: 2/16/22 Date/Time: _____ Date/Time: _____	
Special Instructions/QC Requirements: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	

Cooler Temperature(s) °C and Other Remarks: 1-3 (R13 CF-O2)	
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Chain of Custody Record

Client Information (Sub Contract Lab)
 Client Contact: Sara, Betsy A
 Shipping/Receiving: Betsy, Sara@Euofinset.com
 Company: Euofins Environment Testing Northern Ca
 Address: 880 Riverside Parkway, West Sacramento, CA, 95605
 Phone: 916-373-5600 (Tel) 916-372-1059 (Fax)
 Email: [Blank]
 Project Name: Gadsden PFC Sampling
 Site: [Blank]

Sampler: Sara, Betsy A
 Phone: [Blank]
 Due Date Requested: 3/1/2022
 TAT Requested (days): [Blank]

Lab PM: Sara, Betsy A
 State of Origin: Alabama
 E-Mail: Betsy, Sara@Euofinset.com
 Accreditations Required (See note): [Blank]

COC No: 280-604178.1
 Page: 1 of 1
 Job #: 280-158802-1
 Preservation Codes:
 M - Hexane
 N - None
 O - AsNaO2
 P - Na2O4S
 Q - Na2SO3
 R - Na2SO4
 S - H2SO4
 T - TSP Dodecahydrate
 U - Acetone
 V - MCAA
 W - pH 4-5
 L - EDA
 Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC (MVA/336 PFC PFA, Method 537.1 list (18 cmpds) - Sec	Total Number of Containers	Special Instructions/Note:
Gadsden- RW (280-158802-1)	2/14/22	20:25 Central	Water	Water	X		X	2	
Gadsden- FW (280-158802-2)	2/15/22	11:00 Central	Water	Water	X		X	2	
Gadsden- GAC (280-158802-3)	2/15/22	12:00 Central	Water	Water	X		X	2	

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify)
 Primary Deliverable Rank: 4
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements: [Blank]

Empty Kit Relinquished by: [Signature]
Relinquished by: [Signature] Date: 2/17/2022 14:35
Relinquished by: [Signature] Date: [Blank]
Relinquished by: [Signature] Date: [Blank]

Custody Seal No.: 1997243
 X = Discoloration @ 2/18/22
 Cooler Temperature(s) °C and Other Remarks: [Blank]

Login Sample Receipt Checklist

Client: Gadsden Water Works

Job Number: 280-158802-1

Login Number: 158802

List Number: 1

Creator: Roehsner, Karen P

List Source: Eurofins Denver

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ ($1/4''$).	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Gadsden Water Works

Job Number: 280-158802-1

Login Number: 158802

List Number: 2

Creator: Simmons, Jason C

List Source: Eurofins Sacramento

List Creation: 02/18/22 01:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1997293
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	